

CLAIMS

What is claimed is:

- 1 1. A network, comprising:
 - 2 at least one transmitting device and at least one receiving device; and
 - 3 a bus coupled to between the devices to exchange frames, wherein each
 - 4 frame includes a data structure, at least one control structure, and a clock structure,
 - 5 and wherein a rising edge of each frame indicates the clock structure and a falling
 - 6 edge of each frame indicates that a structure that follows the falling edge of the frame
 - 7 is the data structure or the command structure, and wherein any receiving device in a
 - 8 set of devices is coupled to use a clock structure to adjust each phase of one or more
 - 9 of the frames to synchronize the frames with each other.
- 1 2. The network of claim 1 wherein the data structure comprises a predetermined
- 2 number of encoded data field bits.
- 1 3. The network of claim 1 wherein the command structure comprises a
- 2 predetermined number of encoded command/control field bits.
- 1 4. The network of claim 1 wherein the falling edge of the frame occurring at one
- 2 predetermined point in the control structure indicates a first command and the falling
- 3 edge of the frame occurring at a second predetermined point in the control structure
- 4 indicates a secondary set of commands.

1 5. The network of claim 1 wherein the falling edge of the frame occurring at one
2 predetermined point in the control structure indicates a first command word and the
3 falling edge of the frame occurring at a second predetermined point in the control
4 structure indicates a secondary set of command words, and wherein the falling edge of
5 the frame occurring at one predetermined point in the data structure indicates a first
6 data word and the falling edge of the frame occurring at a second predetermined point
7 in the data structure indicates a secondary set of data words.

1 6. The network of claim 1 wherein the falling edge of the frame occurring at one
2 predetermined point in the control structure indicates a first command word and the
3 falling edge of the frame occurring at a second predetermined point in the control
4 structure indicates a secondary set of command words, and wherein the falling edge of
5 the frame occurring at one predetermined point in the data structure indicates a first
6 data word and the falling edge of the frame occurring at a second predetermined point
7 in the data structure indicates a secondary set of data words, and wherein the
8 secondary set of command words is greater than the secondary set of data words.

1 7. A method for processing data in a network, comprising:

2 transmitting computer data signals embodied in carrier waves from a
3 transmitting device to a receiving device, wherein each computer data signal includes
4 a data structure embodied in an encoded frame, at least one control structure embodied
5 in the encoded frame, and a clock structure embodied in the encoded frame, and
6 wherein a rising edge of the encoded frame indicates the clock structure and a falling
7 edge of the frame indicates whether what follows the falling edge of the frame is the
8 data structure or the command structure; and

9 receiving the computer data signals at the receiving device and using the
10 clock to adjust the phase of the frames to synchronize the frames with each other.

1 8. The method of claim 7 wherein transmitting computer data signals embodied in
2 carrier waves from a transmitting device to a receiving device comprises encoding the
3 data structure with a predetermined number of data field bits.

1 9. The method of claim 7 wherein transmitting computer data signals embodied in
2 carrier waves from a transmitting device to a receiving device comprises encoding the
3 command structure with a predetermined number of command/control field bits.

1 10. The method of claim 7 wherein transmitting computer data signals embodied in
2 carrier waves from a transmitting device to a receiving device comprises dropping the
3 falling edge of the frame at one predetermined point in the control structure to indicate
4 a first command and at a second predetermined point in the control structure to
5 indicate a secondary set of commands.

1 11. The method of claim 7 wherein transmitting computer data signals embodied in
2 carrier waves from a transmitting device to a receiving device comprises:

3 dropping the falling edge of the frame at one predetermined point in the
4 control structure to indicate a first command word and at a second predetermined
5 point in the control structure to indicate a secondary set of command words; and

6 dropping the falling edge of the frame at one predetermined point in the
7 data structure to indicate a first data word and at a second predetermined point in the
8 data structure indicates a secondary set of data words, and wherein the secondary set
9 of command words is greater than the secondary set of data words.

1 12. The method of claim 7 wherein transmitting computer data signals embodied in
2 carrier waves from a transmitting device to a receiving device comprises:

3 dropping the falling edge of the frame at one predetermined point in the
4 control structure to indicate a first command word and at a second predetermined
5 point in the control structure to indicate a secondary set of command words; and

6 dropping the falling edge of the frame at one predetermined point in the
7 data structure to indicate a first data word and at a second predetermined point in the
8 data structure indicates a secondary set of data words.

1 13. A computer data signal embodied in a carrier wave for communicating between
2 a first device and a second device, wherein the first and second devices communicate
3 with each other over a bus, the computer data signal comprising:

4 a data structure embodied in a frame; and

5 at least one control structure embodied in the frame and preceding the
6 data structure; and

7 a clock structure embodied in the frame, wherein a rising edge of the
8 frame defines the clock structure, and wherein a falling edge of the frame indicates
9 that what follows the falling edge of the frame is a data structure or a control structure.

1 14. The computer data signal of claim 13 wherein the data structure comprises a
2 predetermined number of encoded data field bits.

1 15. The computer data signal of claim 13 wherein the command structure
2 comprises a predetermined number of encoded command/control field bits.

1 16. The computer data signal of claim 13 wherein the falling edge of the frame
2 occurring at one predetermined point in the control structure indicates a first command
3 and the falling edge of the frame occurring at a second predetermined point in the
4 control structure indicates a secondary set of commands.

1 17. The computer data signal of claim 13 wherein the falling edge of the frame
2 occurring at one predetermined point in the control structure indicates a first command
3 word and the falling edge of the frame occurring at a second predetermined point in
4 the control structure indicates a secondary set of command words, and wherein the
5 falling edge of the frame occurring at one predetermined point in the data structure
6 indicates a first data word and the falling edge of the frame occurring at a second
7 predetermined point in the data structure indicates a secondary set of data words.

1 18. The computer data signal of claim 13 wherein the falling edge of the frame
2 occurring at one predetermined point in the control structure indicates a first command
3 word and the falling edge of the frame occurring at a second predetermined point in
4 the control structure indicates a secondary set of command words, and wherein the
5 falling edge of the frame occurring at one predetermined point in the data structure
6 indicates a first data word and the falling edge of the frame occurring at a second
7 predetermined point in the data structure indicates a secondary set of data words, and
8 wherein the secondary set of command words is greater than the secondary set of data
9 words.

1 19. A network, comprising:
2 at least one transmitting device; and
3 at least one receiving device coupled to the transmitting device to
4 exchange frames, wherein each frame includes a data structure, at least one control
5 structure, and a clock structure, and wherein a rising edge of the frame indicates the
6 clock structure and the falling edge of the frame indicates that the structure that
7 follows a falling edge of the frame is the data structure or the command structure, and
8 wherein any receiving device is coupled to use the clock to adjust a phase of one or
9 more of the frames to synchronize the frames with each other.

1 20. The network of claim 19 wherein the data structure comprises a predetermined
2 number of encoded data field bits.

1 21. The network of claim 19 wherein the command structure comprises a
2 predetermined number of encoded command/control field bits.

1 22. The network of claim 19 wherein the falling edge of the frame occurring at one
2 predetermined point in the control structure indicates a first command and the falling
3 edge of the frame occurring at a second predetermined point in the control structure
4 indicates a secondary set of commands.

1 23. The network of claim 19 wherein the falling edge of the frame occurring at one
2 predetermined point in the control structure indicates a first command word and the
3 falling edge of the frame occurring at a second predetermined point in the control
4 structure indicates a secondary set of command words, and wherein the falling edge of
5 the frame occurring at one predetermined point in the data structure indicates a first
6 data word and the falling edge of the frame occurring at a second predetermined point
7 in the data structure indicates a secondary set of data words.

1 24. The network of claim 19 wherein the falling edge of the frame occurring at one
2 predetermined point in the control structure indicates a first command word and the
3 falling edge of the frame occurring at a second predetermined point in the control
4 structure indicates a secondary set of command words, and wherein the falling edge of
5 the frame occurring at one predetermined point in the data structure indicates a first
6 data word and the falling edge of the frame occurring at a second predetermined point
7 in the data structure indicates a secondary set of data words, and wherein the
8 secondary set of command words is greater than the secondary set of data words.